

AMENDMENTS TO THE SPECIFICATION:

Page 1, amend paragraph [0002] as:

[0002] Whiteboard is often used in work and life to make record or discussion. For example, in teaching and meeting, words, symbols and so on can be written on the whiteboard and can also be erased conveniently. However, the content written on the traditional whiteboard ~~appears~~ ~~is appeared~~ only once; it can't be stored and reproduced. Therefore, it is hard for the traditional whiteboard to satisfy the increasing application requirements of current digitized life and work.

Page 1, amend paragraph [0003] as:

[0003] Along with the development of electronic technology, an electronic whiteboard is used for teaching in school and for studying and discussing in a department. Such product can promptly convert the symbols written on the whiteboard into electronic signals, and transfers the electronic signals to a connected computer, then directly accomplishes editing ~~Editing~~ or remote information commutation of printing, transmission, etc. via the computer. For the existing electronic whiteboard, due to its large induction area, it is impossible to manufacture, for example, etching and manufacturing the electromagnetic induction type of the printed circuit board, or the resistance-induction type ~~typed~~ frames like touch screens ~~screen~~ cannot be adopted as the induction frame because of high cost. Therefore, the ultrasonic wave transmission and reception between an input pen and an electronic whiteboard is widely used in electronic whiteboard controlling and operation. But the application of such products ~~product~~ is

limited due to the high cost and low accuracy. ~~Consequently, this phase of information generation and exchanging can't be widely digitized.~~

Pages 2-3, amend paragraph [0009] as:

[0009] An electronic whiteboard with a built-in electromagnetic induction layer of wire lattice includes: a writing input portion, a covering frame portion formed around the periphery of the writing input portion, and a control circuit; wherein the writing input portion has multiple layers and is enclosed in the frame; the writing input portion includes a surface writing layer, an underlayer and an input induction layer which is formed between the surface writing layer and the underlayer, and is connected to the control circuit by its output, characterized in that the induction layer is a wire lattice winded and interlaced separately by wires along the X and Y axes, the wires are insulated with each other at the crossing points, and ~~[[an]]~~ a space formed within each lattice unit constitutes one induction cell.

Page 3, amend paragraph [0013] as:

[0013] For the induction layer formed by a wire lattice winded and interlaced separately by wires along the X and Y axes ~~and~~, the wires can be covered or coated by ~~[[a]]~~ an insulating layer on the surface. Alternatively, enameled wires can be adopted directly as the wires.

Page 3, amend paragraph [0014] as:

[0014] More than one induction layer are overlaid together, and the induction cells on each induction layer are interlaced one another at the same or different intervals. In other

words, the size of an induction cell on one induction layer may be the same as or different from the size of an induction cell on another induction layer.

Page 3, amend paragraph [0015] as:

[0015] In order to position the winded wire lattice ~~strictly~~ reliably, the wire lattice can be attached and fixed on the insulating membrane by thermal pressing or thermal melting[[,]] so as to form the wire electromagnetic induction layer with an insulating membrane. The insulating membrane is made of film material so as to lower the cost.

Pages 3-4, amend paragraph [0017] as:

[0017] When the writing area ~~scope~~ of the electronic whiteboard is large, the area of the induction layer should be enlarged correspondingly, and the wire electromagnetic induction layer with the insulating membrane [[is]] may be made up of multiple pieces of the wire electromagnetic induction layer assembled together. A ~~with each other~~, a wire eduction electrical connection means along the X or Y axis is provided on each piece of wire lattice electromagnetic induction layer, and ~~said~~ each piece of wire lattice electromagnetic induction layer is connected by the wire eduction electrical connection means.

Page 4, amend paragraph [0018] as:

[0018] ~~Said~~ The connection means is a pin-type connection means or a flexible printed wiring means, or a PIN-PIN connection means, or a welding spot (VGA) thermal-melting connection means, or an ultrasonic welding device, or a solder-plate welding device, or a puncturing connection means.

Page 4, amend paragraph [0019] as:

[0019] The control circuit includes circuits for signal amplification, filtering acquisition and data processing, and is provided with a signal output control circuit and/or a storing device.

Page 5, amend paragraph [0026] as:

[0026] The control circuit ~~[[is]]~~ may also be installed outside the body, and connected to the body through the electrical connection means, the output of the wire lattice of the induction layer is connected with the output interface of the induction layer by means of pressure-connection, plug-in connection or welding-connection, and an interface matching the electrical connection means of the induction layer is provided on the control circuit.

Page 5, amend paragraph [0028] as:

[0028] The output interface of the induction layer and the interface of the control circuit ~~[[is]]~~ are a pin-type connection means, or a flexible printed wiring means, or a PIN-PIN connection means, or a welding spot (VGA) thermal-melted connection means, or an ultrasonic welding device, or a solder-plate welding device, or a puncturing connection means.

Page 6, amend paragraph [0030] as:

[0030] The control circuit ~~[[is]]~~ may be installed in the bracket, the interface electrically connecting with the induction layer is set on the bracket, and the output

interface of the induction layer is set at a place in the body corresponding to the interface of the control circuit.

Page 6, amend paragraph [0032] as:

[0032] One side of the body is fixed in a spool in which wring-springs for winding up the body are mounted on both ends, and another side of the body is provided with a positioning fastener. ~~And said~~ The control circuit may be is installed in the spool.

Page 6, amend paragraph [0033] as:

[0033] Referring to the above-mentioned technical solutions, it is known that the present invention possesses the following advantages: simple and reasonable structure; easy manufacturing; highly reduced cost of the electronic whiteboard; convenient for maintenance; highly improved induction accuracy and can be expanded ~~spread~~ widely. The electronic whiteboard according to the invention has resolved the problem of the ~~digitalization in this phase~~ conventional whiteboard, ~~which enriches the modality of digitized products~~ and creates an application mode of communication by using the convenience ~~one of the main channels~~ of the electronic whiteboard.

Page 7, amend paragraph [0039] as:

[0039] Fig.6 is a diagram showing the structure of the induction layer made up of more than one piece ~~pieces~~ and the interface of the electrical connection.

Page 8, amend paragraph [0047] as:

[0047] The area of the said induction layer 5 is the same as or smaller than that of the writing layer 2 and the underlayer 4, ~~that is,~~ and therefore the induction layer 5 is entirely

or partially sandwiched between the writing layer 2 and the underlayer 4. The induction layer 5 is positioned at one side or in the center of the writing area ~~scope~~ of the writing input portion.

Pages 8-9, amend paragraph [0050] as:

[0050] As shown in figs 2, 3, 4 and 5, the induction layer 5 is a wire lattice interlaced by the wires 52 winded along the X axis and the wires 51 winded along the Y axis, and the wires are insulated with each other at the crossing point 54. The area enclosed by each lattice unit constitutes one induction cell 53. Positioning columns 511 can be provided around the induction layer while winding. The wires are entirely covered or coated by an insulating layer on the surface.[[.]] For example, the wire lattice can be winded by the enameled wires along X and Y axes.

Page 9, amend paragraph [0051] as:

[0051] In order to position the winded wire lattice ~~strictly~~ reliably, and easy for the following ~~technique and maintenance, the~~ -. The wire lattice can be attached and fixed on the insulating membrane 55 by thermal pressing or thermal melting[[,.]] so as to form the wire lattice electromagnetic induction layer 5 with an insulating membrane 55. The insulating membrane is made of film material.

Page 9, amend paragraph [0052] as:

[0052] As shown in fig. 7, multiple induction layers 5 and 5' are overlaid together and the induction cells 53 on respective induction layers are interlaced with each other[[,.]] so as to improve the accuracy of the electronic whiteboard. The intervals of the

induction cells 53 on respective layers can be in the same or different sizes. After the induction layers whose induction cells 53 are in different intervals are overlaid together, the scale unit of the coordinates is consequentially shorten, so that the accuracy of induction is improved. In the case that the induction layers whose induction cells 53 are in the same size are overlaid together, the scale unit of the coordinates is also shorten due to the interlaced location of the induction cells , so as to enhance the precision of the electronic whiteboard.

Page 9, amend paragraph [0053] as:

[0053] As shown in fig. 6, if the writing area of the electronic whiteboard is large, the area of the induction layer should be enlarged correspondingly, and the large electromagnetic induction layer can be assembled by multiple wire electromagnetic induction layers 5 and 5' with membranes, wherein wire eduction electrical connection means 56 and 57 along the X and Y axes are provided on each piece of the wire lattice electromagnetic induction layer, and ~~said~~ each piece of the wire lattice electromagnetic induction layer is connected by means of the wire eduction electrical connection means. In the present invention, as illustrated in fig. 7, each wire winded along the Y axis is winded with multiple turns to form a number of latitudes across the entire wire lattice and each wire winded along the X axis is also winded with multiple turns to form a number of longitudes across the entire wire lattice.

Page 9, amend paragraph [0054] as:

[0054] ~~Said~~ The connection means 56 and 57 may be one of the following: a pin-type connection means, a flexible printed circuit means, a PIN-PIN connection means, a

welding spot (VGA) thermal-melted connection means, an ultrasonic welding device, a solder-plate welding device, or a puncturing connection means.

Page 10, amend paragraph [0055] as:

[0055] The signal output device of the electronic whiteboard is the cable connection means or wireless data switching means. Particularly, the cable connection means may be an electrical cable with an USB interface; the wireless data switching means may be ~~[[a]]~~ an RF transceiver. With above configuration, local storage or remote transmission can be performed, or an Internet access means can be connected ~~set~~ immediately, so as to pack the input contents as data packets and then transmit the data packets. Certainly, the signal output device is connected to a computer and/or a printer, ~~so as to~~ so that a user can immediately edit and/or print the induction-collected information on the whiteboard. Furthermore, the signal output device is connected directly to a data storage device, so as to store the data and then transfer the said ~~the~~ data into a computer or other facilities via a portable memory device. The specific circuit configuration and connection mode between the signal output device and the peripheral are similar to those in other consumer electronic products, and hence ~~herein~~ the unnecessary details will not be described.

Page 10, amend paragraph [0056] as:

[0056] According ~~The structure of the induction layer and the control circuit is changed according~~ to the present invention, the control circuit is connected to the output end of the wire lattice in a whole, and the control circuit is positioned in the body.

Page 11, amend paragraph [0060] as:

[0060] Furthermore, as shown in fig. 8, the control circuit 8 according to the invention ~~[[is]]~~ can be positioned outside the body, and connected to the body through the electrical connection means. The output of the wire lattice of the induction layer 5 is connected with the output interface 82 of the induction layer 5 by means of pressure-connection, plug-in connection or welding-connection. The connection can be achieved with existing usual standard interfaces, for example, the output interface 82 of the induction layer and the interface 81 of the control circuit can be one of the following connection types respectively: pin-type connection means, flexible printed circuit means, PIN-PIN connection means, welding spot (VGA) thermal-melted connection means, ultrasonic welding device, solder-plate welding device, puncture-type connection means.

Pages 11-12, amend paragraph [0063] as:

[0063] The operation mechanism of the present invention is as shown in fig. 9. In Fig. 9, P is the signal input terminal of the pen, and there is a bigger conductor ~~[[P']]~~ on the head of the pen. When the pen is close ~~closes~~ to the induction cell, the pen-point constitutes an electrode of the electric field, and the conductive medium on the induction layer constitutes another electrode. The electric fields of the pen along X and Y axes are indicated by Cx and Cy. Y1 and Y2 in the figure denote the induction PINs along the Y axis, X1 and X2 denote the induction PINs along the X ~~axis-~~ axis. There is a line Zx along X axis, which strings all lines in the X axial direction together and is equivalent to a resistance Zx, and there is a line Zy along Y ~~axis-~~ axis, which strings all lines in the Y axial direction together and is equivalent to a resistance Zy. When the pen shakes above the antenna, the alternative electric potential on the pen-point couples to the X and Y

axial antenna groups via resistances Z_x and Z_y , and because the two groups of antennas are formed by a plurality of lines, the line closer to the pen-point will receive a stronger alternative electric potential. The vector of the electric potential received by these lines is indicated by the position of the above slip resistance arrow between the resistances. Because the two groups of antennas are overlaid, when the pen is moved, it is regarded that the two slip resistances move simultaneously in the same or reverse directions. The different positions that the Y axis directional resistance moves to are denoted as different coordinates on the Y axis, and the different positions that the X axis directional resistance moves to are denoted as different coordinates on the X axis. The plane coordinates of the pen can be calculated according to the X and Y coordinates, consequentially the position of the pen can be determined.

Pages 12-13, amend paragraph [0063] as:

[0063] Moreover, the electromagnetic pen transmits electromagnetic signal continuously. When the pen-point touches the induction generation device, ~~said~~ the electromagnetic signal passes through a certain location of the induction antenna, and then the antenna at this location induces the signal. The location signal induced by the induction generation device is transferred to the input terminal of the control identification circuit through the wires along X,Y axes. After array selecting, control process, band-pass filtering, detection rectification and A/D conversion, the resultant location signal is transferred to the processing circuit and calculated by the CPU[.,.] so as to determine the location coordinates of the electromagnetic signal on the induction

antenna and various operation statuses. Above data or information is sent to a computer, thereby to control the computer to identify, display, record and so on.

Page 13, amend paragraph [0066] as:

[0066] The output data induced and acquired by the whiteboard according to the present invention are identified data, which are transformed into the data of the motion track of the pen. Otherwise, ~~said~~ the output data are unidentified data, i.e., coordinates data of the pen at respective time points.

Pages 13-14, amend paragraph [0068] as:

[0068] As shown in fig. 11, one side of the body is ~~are~~ set into a spool 100 and fixed. Wring-springs for winding up the body are mounted on both ends of the spool. A positioning fastener 101 is provided on the other side of the body.